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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,122	12/04/2001	Colin Bulthaupt	NANO-00201	2119

7590 06/18/2004
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EXAMINER	
YAN, REN LUO	
ART UNIT	PAPER NUMBER
2854	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/007,122	Applicant(s) BULTHAUP ET AL.	
	Examiner Ren L Yan	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 89 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 89 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3-26-2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono(6,123,023) in view of Squibb(5,752,446).

The patent to Ono teaches the structure of a micro-stencil as claimed including a membrane 3 having a receptor surface and a print surface which is provided with an array of stencil features, a flow region through the membrane to allow printing ink 23 to flow from the receptor surface to the print surface for printing the stencil features on a medium 1. The flow region comprises passages from the receptor surface to the print surface. Porous layer 42 serves as a reservoir for holding and supplying printing ink with the porous layer 42 being coupled to the receptor surface of the membrane. The porous layer 42 is positioned within the flow region as recited. See Figs. 1a-1d and column 4, line 21 through column 5, line 25 in Ono for details. However, the micro-stencil of Ono does not have means to align the membrane with the medium between multiple prints as recited. The patent to Squibb teaches a stencil 2 having aligning means(fiducials 6a and 6b) to align the stencil with the medium 1 each time the stencil is used to print an image on the medium. See Fig. 1 and column 1, line 26 through column 2, line 33 in Squibb for example. It would have been obvious to one of ordinary skill in the art to provide the

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stencil of Ono with the align means as taught by Squibb in order to properly align the stencil with the medium so as to ensure printing quality. Regarding claim 5, Ono teaches in column 2, lines 41-46 to use a porous member made of nylon or other materials. With respect to claims 8 and 11, the applied prior art references teach all that is claimed except that they do not specify the thickness of the stencil membrane and the lateral dimension of the stencil features. As is well known to those having ordinary skill in the art that the thickness of the stencil membrane and the lateral dimension of the stencil features are determined based on the image patterns and the thickness of the image pattern desired to be printed. In general, when thin and fine image patterns are desired, the thickness of the stencil membrane and the lateral dimension of the stencil features, which define the image pattern, would have to be thin and small in order to show fine details of the image. Therefore, when the image patterns requires that the image pattern to be less than 1.0 micron in thickness and the lateral dimension of the stencil features to be less than 5.0 microns as recited, it would have been obvious to one of ordinary skill in the art to design the stencil membrane and stencil features accordingly so that a desired image pattern can be produced.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of Squibb as applied to claim 1 above, and further in view of Kinney et al(3,934,503). Ono, as modified by Squibb teaches all that is claimed except for the use of nylon as the stencil membrane. Kinney et al teach the conventionality of using nylon as the material for a stencil membrane. See the abstract in Kinney et al for example. It would have been obvious to those having ordinary skill in the art to provide the stencil membrane of Ono, as modified by Squibb with nylon as taught by Kinney et al in order to achieve high tensile strength for the stencil.

Claims 10 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of Squibb as applied to claims 1 and 8 above, and further in view of Arai et al(4,957,808). Ono, as modified by Squibb teaches all that is claimed except for the use of polydimethylsiloxane as the stencil material. Arai et al teach the conventional use of polydimethylsiloxane for a stencil paper. See claim 8 in Arai et al for example. It would have been obvious to those having ordinary skill in the art to provide the stencil membrane of Ono, as modified by Squibb with polydimethylsiloxane so as to achieve excellent release property for the stencil. With respect to the recited lateral feature dimensions of less than 5.0 microns in claim 89, see statement regarding claims 8 and 11 above.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ren L Yan whose telephone number is 571-272-2173. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ren L Yan
Primary Examiner
Art Unit 2854

Ren Yan
June 10, 2004